equally protective method of conductor separation is employed.

(4) *Equipment location.* Outdoor metal structures supporting antennas, as well as self-supporting antennas such as vertical rods or dipole structures, shall be located as far away from overhead conductors of electric light and power circuits of over 150 volts to ground as necessary to avoid the possibility of the antenna or structure falling into or making accidental contact with such circuits.

(5) *Grounding*—(i) *Lead-in conductors.* If exposed to contact with electric light or power conductors, the metal sheath of aerial cables entering buildings shall be grounded or shall be interrupted close to the entrance to the building by an insulating joint or equivalent device. Where protective devices are used, they shall be grounded.

(ii) *Antenna structures.* Masts and metal structures supporting antennas shall be permanently and effectively grounded without splice or connection in the grounding conductor.

(iii) *Equipment enclosures.* Transmitters shall be enclosed in a metal frame or grill or separated from the operating space by a barrier, all metallic parts of which are effectively connected to ground. All external metal handles and controls accessible to the operating personnel shall be effectively grounded. Unpowered equipment and enclosures shall be considered grounded where connected to an attached coaxial cable with an effectively grounded metallic shield.

[51 FR 25318, July 11, 1986, as amended at 61 FR 5510, Feb. 13, 1996]

§§ 1926.409–1926.415 [Reserved]

SAFETY-RELATED WORK PRACTICES

§ 1926.416 General requirements.

(a) *Protection of employees*—(1) No employer shall permit an employee to work in such proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work, unless the employee is protected against electric shock by deenergizing the circuit and grounding it or by guarding it effectively by insulation or other means.

(2) In work areas where the exact location of underground electric powerlines is unknown, employees using jack-hammers, bars, or other hand tools which may contact a line shall be provided with insulated protective gloves.

(3) Before work is begun the employer shall ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit. The employer shall post and maintain proper warning signs where such a circuit exists. The employer shall advise employees of the location of such lines, the hazards involved, and the protective measures to be taken.

(b) *Passageways and open spaces*—-(1) Barriers or other means of guarding shall be provided to ensure that workspace for electrical equipment will not be used as a passageway during periods when energized parts of electrical equipment are exposed.

(2) Working spaces, walkways, and similar locations shall be kept clear of cords so as not to create a hazard to employees.

(c) *Load ratings.* In existing installations, no changes in circuit protection shall be made to increase the load in excess of the load rating of the circuit wiring.

(d) *Fuses.* When fuses are installed or removed with one or both terminals energized, special tools insulated for the voltage shall be used.

(e) *Cords and cables.* (1) Worn or frayed electric cords or cables shall not be used.

(2) Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 55 FR 42328, Oct. 18, 1990; 58 FR 35179, June 30, 1993; 61 FR 9251, Mar. 7, 1996; 61 FR 41738, Aug. 12, 1996]

§ 1926.417 Lockout and tagging of circuits.

(a) *Controls.* Controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits shall be tagged.

(b) *Equipment and circuits.* Equipment or circuits that are deenergized shall be rendered inoperative and shall have tags attached at all points where such equipment or circuits can be energized.

(c) *Tags.* Tags shall be placed to identify plainly the equipment or circuits being worked on.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 55 FR 42328, Oct. 18, 1990; 58 FR 35181, June 30, 1993; 61 FR 9251, Mar. 7, 1996; 61 FR 41739, Aug. 12, 1996]]

§§ 1926.418–1926.430 [Reserved]

SAFETY-RELATED MAINTENANCE AND ENVIRONMENTAL CONSIDERATIONS

§ 1926.431 Maintenance of equipment.

The employer shall ensure that all wiring components and utilization equipment in hazardous locations are maintained in a dust-tight, dust-ignition-proof, or explosion-proof condition, as appropriate. There shall be no loose or missing screws, gaskets, threaded connections, seals, or other impairments to a tight condition.

§ 1926.432 Environmental deterioration of equipment.

(a) *Deteriorating agents*—(1) Unless identified for use in the operating environment, no conductors or equipment shall be located:

(i) In damp or wet locations;

(ii) Where exposed to gases, fumes, vapors, liquids, or other agents having a deteriorating effect on the conductors or equipment; or

(iii) Where exposed to excessive temperatures.

(2) Control equipment, utilization equipment, and busways approved for use in dry locations only shall be protected against damage from the weather during building construction.

(b) *Protection against corrosion.* Metal raceways, cable armor, boxes, cable sheathing, cabinets, elbows, couplings, fittings, supports, and support hardware shall be of materials appropriate for the environment in which they are to be installed.

§§ 1926.433–1926.440 [Reserved]

SAFETY REQUIREMENTS FOR SPECIAL EQUIPMENT

§ 1926.441 Batteries and battery charging.

(a) *General requirements*—(1) Batteries of the unsealed type shall be located in enclosures with outside vents or in well ventilated rooms and shall be arranged so as to prevent the escape of fumes, gases, or electrolyte spray into other areas.

(2) Ventilation shall be provided to ensure diffusion of the gases from the battery and to prevent the accumulation of an explosive mixture.

(3) Racks and trays shall be substantial and shall be treated to make them resistant to the electrolyte.

(4) Floors shall be of acid resistant construction unless protected from acid accumulations.

(5) Face shields, aprons, and rubber gloves shall be provided for workers handling acids or batteries.

(6) Facilities for quick drenching of the eyes and body shall be provided within 25 feet (7.62 m) of battery handling areas.

(7) Facilities shall be provided for flushing and neutralizing spilled electrolyte and for fire protection.

(b) *Charging*—(1) Battery charging installations shall be located in areas designated for that purpose.

(2) Charging apparatus shall be protected from damage by trucks.

(3) When batteries are being charged, the vent caps shall be kept in place to avoid electrolyte spray. Vent caps shall be maintained in functioning condition.

§§ 1926.442–1926.448 [Reserved]

DEFINITIONS

§ 1926.449 Definitions applicable to this subpart.

The definitions given in this section apply to the terms used in subpart K. The definitions given here for ''approved'' and ''qualified person'' apply, instead of the definitions given in § 1926.32, to the use of these terms in subpart K.

Acceptable. An installation or equipment is acceptable to the Assistant